

success story



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Dow Chemical Company

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– Stan McCreight
Senior Technical Specialist
The Dow Chemical Company

The Dow Chemical Company needed to improve the performance and stability of its quarterly financial-reporting processes. Working with HP Services, Dow implemented an HP StorageWorks storage-area network (SAN), which reduces processing time for batch jobs, ramps up service levels, and accommodates future capacity requirements. “Reliability was the real attraction – our HP StorageWorks SAN just doesn’t fail.”

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Dow Chemical discovers hp SAN is the catalyst for higher service levels

As the U.S. Securities and Exchange Commission (SEC) institutes more stringent reporting requirements for public companies, creating quarterly financial reports is becoming more and more difficult. "The SEC decreased our quarterly reporting cycle by two thirds," says Stan McCreight, an architecture specialist in the Corporate Information Systems group at The Dow Chemical Company in Southfield, Mich.

Financial reporting involves many interrelated business processes. Having fast and reliable information systems translates into timely, accurate reports. These business dynamics led McCreight and his colleagues in Dow's Shared Data Network group to implement HP storage-area network (SAN) technology. "Our performance for financial reporting improved across the board since installing the HP StorageWorks SAN," says McCreight. "In some cases, batch jobs that took three hours to run now finish in 90 minutes. Our HP SAN is well worth the investment."

formulating a better data warehouse

A science and technology company, Dow provides innovative chemical, plastic, and agricultural products and services to many consumer markets ranging from food to home construction. With annual sales of \$28 billion, the manufacturing giant serves customers in more than 170 countries. Dow masters science and technology to constantly improve what is essential to human

"Our ability to run jobs more quickly is setting a whole new set of expectations with our business partners. It's a case of the technology actually boosting the service levels. Our HP StorageWorks SAN is making an important contribution to the business."

– Stan McCreight



progress, and the manufacturer depends on innovative information technology (IT) to support its global operations.

For years, Dow has used HP AlphaServer systems to power an enterprise data warehouse, which supports financial reporting, marketing and other corporate functions. Solutions architects from HP Services designed and configured the data warehouse systems to meet Dow's requirements. They implemented a primary cluster of four HP AlphaServer systems at Dow headquarters in Midland, Michigan and more than 15 TB of attached storage within HP StorageWorks systems. "The data warehouse is central to Dow's global reporting and financial-close operations," McCreight says. "Managers have high expectations for its availability and performance."

The Oracle-based data warehouse stores records for some of Dow's most critical information systems, with an emphasis on reporting and online analytical processing (OLAP). Dow uses enterprise resource planning (ERP) applications to summarize and load key financial data into the data warehouse, enabling authorized users throughout the company to generate current reports about earnings, budgets, manufacturing performance, and sales trends. "These are some of the most important information systems in the company," says McCreight. "Managers and analysts at all of our global manufacturing sites use them."

To store financial data in the warehouse, Dow initially deployed a SCSI cluster, then later upgraded to a star coupler configuration supporting about 900 disk drives. This configuration worked well until Dow began to run out of capacity. "The star coupler environment didn't scale



well," McCreight says. "It's ideal for some applications, but we reached a threshold with the technology."

SAN solution speeds processing

After talking to HP engineers, McCreight determined that a SAN would be a good way to expand Dow's financial-reporting environment. In addition to its inherent scalability, he liked the speed of fiber-optic interconnect technology and the overall stability of a networked storage environment. "Reliability was the real attraction for us – the HP StorageWorks SAN just doesn't fail," McCreight emphasizes. "Furthermore, the cost was about the same as our older storage technology."

Decision makers at Dow also considered SAN solutions from EMC and Teradata, but found SAN technology from HP less risky. "We have used HP solutions for years, and depend on thousands of HP servers and storage systems throughout the company," McCreight says. "Our experiences with HP technology are all good, and we are pleased with the reliability and stability HP delivers to our computing environment."

Led by Dow technical specialists Louis Schenk and Wayne Fritsch, McCreight's team deployed five HP StorageWorks Enterprise Modular Array 16000 (EMA16000) systems, 12 pairs of HSG80 controllers, and eight 16-port switches. Then Dow worked with HP Services to implement two separate SANs – one for production data processing and another for backup. Currently, the production SAN has 15 TB of capacity. "HP StorageWorks HSG80 controller firmware allows us

to create mirror images of the data so each transaction simultaneously writes to both SAN environments," McCreight explains.

extracting faster production cycles with backup agents

Each day, Dow system administrators back up the entire contents of the SAN to three HP ESL9000 tape libraries, each with eight tape drives. A custom HP Storage Library System (SLS) backup application mounts the drives, operates the tape robots, and backs up the data. HP helped Dow develop this unique backup architecture to preserve production CPU cycles. "In the past, the tape drives were connected directly to the production HP AlphaServer systems," explains McCreight. "Each night, the backup operation would dominate the production cycles, and the database had to go into a backup mode. HP agreed we should mount the mirrored drives on the backup node to control the tape-backup procedure, which doesn't affect the production cluster."

As an additional fail-safe measure, Dow established a disaster-recovery site at its Freeport manufacturing facility, based around a four-node AlphaServer cluster to emulate the production systems. "We set up the disaster-recovery site for one-to-one data mapping," says McCreight. "We can install the backup tapes at our production SAN in Midland or our disaster-recovery site in Freeport."

Dow Chemical purchased an HP Services Gold-support contract, which entitles the IT staff to round-the-clock technical support and a dedicated technical-support



manager. HP field engineers handle all SAN-management activities, part of a contract that guarantees 99.99 percent uptime for these critical information systems. "HP's field support is great," says McCreight. "The HP team did a thorough job implementing the SAN, and we have had no issues. HP is always here for us."

client needs:

- Improve the performance and stability of Dow's quarterly financial-reporting processes
- Expand Dow's financial-reporting environment with faster and more reliable information systems
- Update current storage technology for Dow's most critical information systems without additional costs or IT staff

client results:

- HP StorageWorks SAN improves services levels and boosts the speed, reliability, and stability of quarterly reporting processes.
- SAN architecture permits plenty of scalability, with near-limitless storage capacity, enabling Dow Chemical Company to respond effectively to evolving reporting requirements.
- HP Services helped streamline a complex technology deployment, maximizing the resources of internal IT staff.
- HP helped Dow develop a unique backup architecture to preserve production CPU cycles.

what makes it work:

hardware:

- Five HP StorageWorks Enterprise Modular Array 16000 systems (EMA16000)
- 12 HP StorageWorks HSG80 controllers
- Eight 16-port HP StorageWorks switches
- Three HP ESL9000 tape libraries, each with eight tape drives
- 10 HP AlphaServer systems (models GS160 and GS60e)

software:

- HP OpenVMS operating system
- HP Storage Library System (SLS) backup application
- Oracle8i database

hp services:

- SAN implementation by HP Business Critical Services
- Hardware and software Gold services
- 99.99 percent uptime guarantee
- OpenVMS Consulting



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